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Foreign Priority

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Parties**Assignees**

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[Number of Claims]

5

[Number of Pages in Document]

8

(56) [Cited Reference(s)]

[Literature]

Japan Unexamined Patent Publication Hei5-88398(JP,A)

[Literature]

Japan Unexamined Patent Publication Hei5-65388(JP,A)

[Literature]

Japan Unexamined Patent Publication Hei4-225060(JP,A)

[Literature]

European Unexamined Patent Publication524731(EP,A)

(58) [Field of Search]

(International Class6,DB*)C08L 69/00C08L 25/00 -
25/16C08L 51/00 - 55/04C08L 83/10 - 83/12

(65) [Publication Number of Unexamined Application (A)]

Japan Unexamined Patent Publication Hei 6-279669

(31) [Priority Application Number]

9202090

(32) [Priority Date]

1992December2*

(33) [Priority Country]

Netherlands(NL)

(73) [Patent Rights Holder]

[Identification Number]

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Claims

(57) [Claim(s)]
[Claim 1]

Below-mentioned component (A) - (C): aromatic polycarbonate; which does not have the(A) polysiloxane block

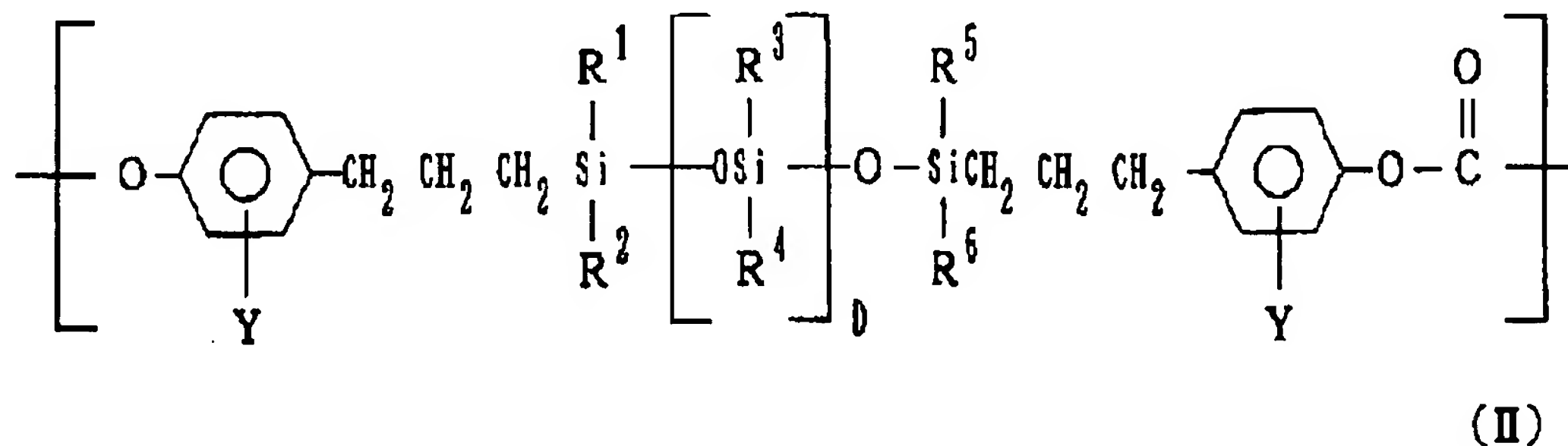
With styrene-containing graft polymer which has (B)
styrene-containing copolymer and/or rubbery graft base, said
graft polymer of 50 - 100 weight% and those which consist of
said copolymer of 0 - 50 weight%; and

(C) polysiloxane-polycarbonate block copolymer;
component (A) and component (B) and per 100 parts by
weight of total, of component (C)

<input type="checkbox"/>	<input type="text"/>	
<input type="checkbox"/>	component <input type="text"/> weight% <input type="text"/>	
<input type="checkbox"/>	<input type="text"/>	
<input type="checkbox"/>	component <input type="text"/> weight% <input type="text"/>	
<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>
<input type="checkbox"/>	component (C) <input type="text"/> weight%	<input type="checkbox"/>

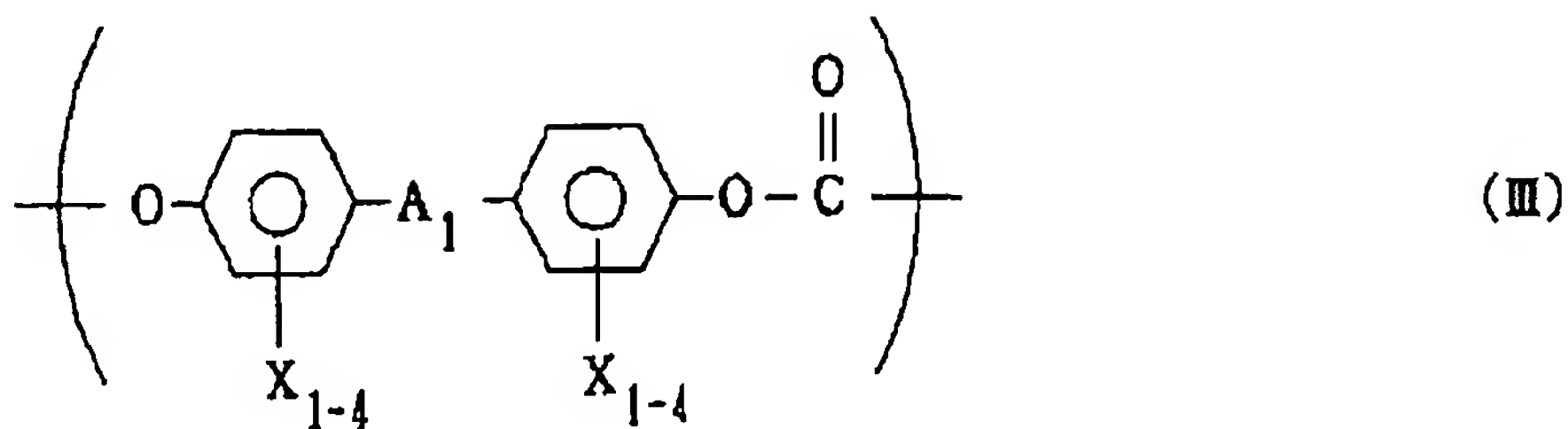
blend above-mentioned component (C) as Formula (a) (II):

[Chemical Formula 1]



polysiloxane block1-50weight% and Formula (b) (III):

[Chemical Formula 2]



50-99 weight% (II) and (III) where R¹, R², R³, R⁴, R⁵, R⁶ are independently hydrogen atom, hydrocarbon group or halogenation hydrocarbon group; D is 5-140; Y is hydrogen atom or alkoxy group; A₁ is 1-15 carbon atoms (O), -S(O)₂-, -O-, or with -C-; X is hydrogen atom, halogen, or monovalent hydrocarbon group mutually.), the polymer mixture* which becomes and makes feature

Including polysiloxane-polycarbonate block copolymer which configuration is done with polycarbonate block 50-99 weight% (However, divalent hydrocarbon group, -S-, -S-S-, -S where R¹, R², R³, R⁴, R⁵, R⁶ each one independently display hydrogen atom, hydrocarbonyl group or halogenation hydrocarbonyl group mutually in the above-mentioned Formula (II) and (III); as for D with integer 5-140; as for Y with hydrogen atom or alkoxy group; as for A₁ have optionally substitutable 1-15 carbon atoms (O), -S(O)₂-, -O-, or with -C-; And each X independently is hydrogen atom, halogen, or monovalent hydrocarbon group mutually.), the polymer mixture* which becomes and makes feature

Claim 2

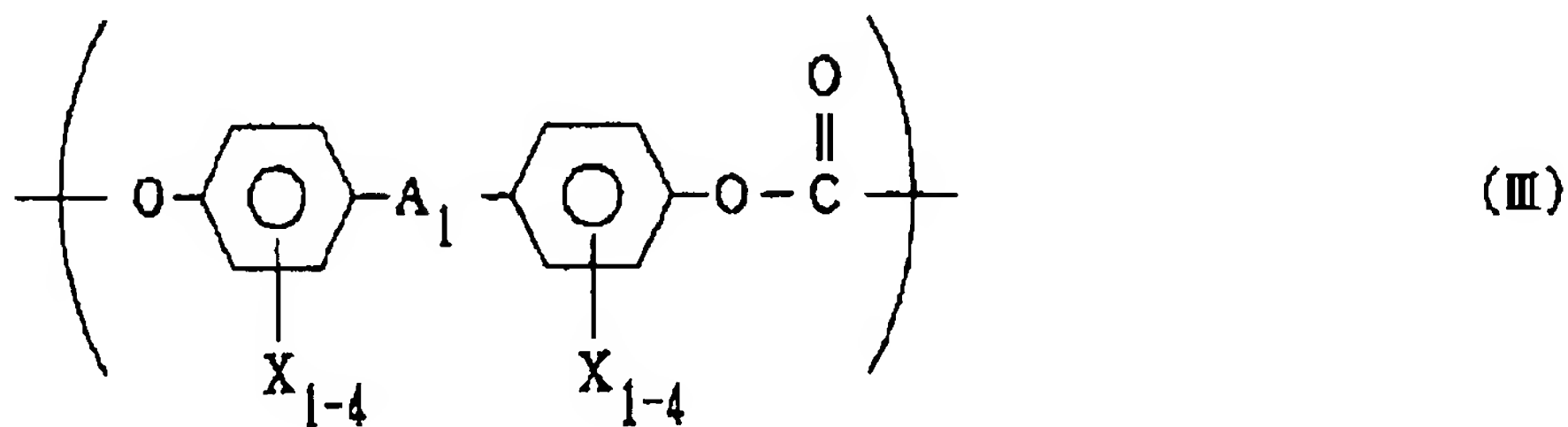
[Claim 2]

polycarbonate block of polysiloxane-polycarbonate block copolymer (C) which is included in said polymer mixture Formula (III):

polycarbonate block of polysiloxane-polycarbonate block copolymer (C) which is included in said polymer mixture Formula (III):

Chemical Formula 3

[Chemical Formula 3]

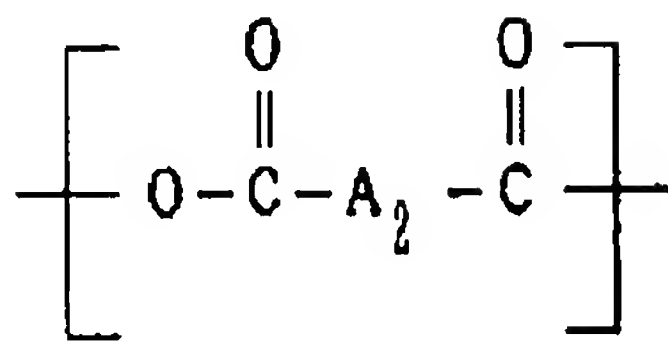


(In Formula, A₁ and X have aforementioned meaning.) (IV):

unit 75-99 weight% and Formula of (In Formula, A₁ and X have aforementioned meaning.) (IV):

Chemical Formula 4

[Chemical Formula 4]



(IV)

(A_2 6-18 carbon atoms) and
1-25 weight% of (In Formula, A_2 is
alkylene group which has 6 - 18 carbon atom.) and polymer
mixture* which is stated in Claim 1 which is made feature

Claim 3

content of polysiloxane unit in component (C) and total of
content of rubbery graft base in component (B), calculating
component (A) and component (B) and on basis of total
weight of component (C), it is a range of 2.5 - 25 weight%
and polymer mixture* which is stated in Claim 1 which is
made feature

Claim 4

said polymer mixture, graft does blend of styrene and
derivative and/or acrylic monomer of the (2) methacrylonitrile
and/or acrylonitrile and/or maleic anhydride and/or maleic
anhydride where (1) styrene and/or; al -methylstyrene and/or
aromatic core is substituted on (3) rubber component (B) as,
containing graft polymer which is acquired by the polymer
mixture* which is stated in Claim 1 which becomes and
makes feature

Claim 5

said polymer mixture, containing copolymer which
configuration is done from unit which was induced from
derivative and/or acrylic monomer of styrene and (2)
methacrylonitrile and/or acrylonitrile and/or maleic anhydride
and/or maleic anhydride where (1) styrene and/or; al
-methylstyrene and/or aromatic core is substituted component
(B) as, polymer mixture* which is stated in Claim 1 which
becomes and makes feature

Specification

[Description of the Invention]

[0001]

[Field of Industrial Application]

this invention containing aromatic polycarbonate, (B)
styrene-containing copolymer and/or styrene-containing graft
polymer, and (C) polysiloxane-polycarbonate block
copolymer which do not include (A) polysiloxane block,
regards polymer mixture which becomes.

It is something which configuration is done from aliphatic
diester unit 1-25 weight% of (In Formula, A_2 is
alkylene group which has 6 - 18 carbon atom.) and polymer
mixture* which is stated in Claim 1 which is made feature

[Claim 3]

content of polysiloxane unit in component (C) and total of
content of rubbery graft base in component (B), calculating
component (A) and component (B) and on basis of total
weight of component (C), it is a range of 2.5 - 25 weight%
and polymer mixture* which is stated in Claim 1 which is
made feature

[Claim 4]

said polymer mixture, graft does blend of styrene and
derivative and/or acrylic monomer of the (2) methacrylonitrile
and/or acrylonitrile and/or maleic anhydride and/or maleic
anhydride where (1) styrene and/or; al -methylstyrene and/or
aromatic core is substituted on (3) rubber component (B) as,
containing graft polymer which is acquired by the polymer
mixture* which is stated in Claim 1 which becomes and
makes feature

[Claim 5]

said polymer mixture, containing copolymer which
configuration is done from unit which was induced from
derivative and/or acrylic monomer of styrene and (2)
methacrylonitrile and/or acrylonitrile and/or maleic anhydride
and/or maleic anhydride where (1) styrene and/or; al
-methylstyrene and/or aromatic core is substituted component
(B) as, polymer mixture* which is stated in Claim 1 which
becomes and makes feature

[Description of the Invention]

[0001]

[Field of Industrial Application]

this invention containing aromatic polycarbonate, (B)
styrene-containing copolymer and/or styrene-containing graft
polymer, and (C) polysiloxane-polycarbonate block
copolymer which do not include (A) polysiloxane block,
regards polymer mixture which becomes.

[0002]

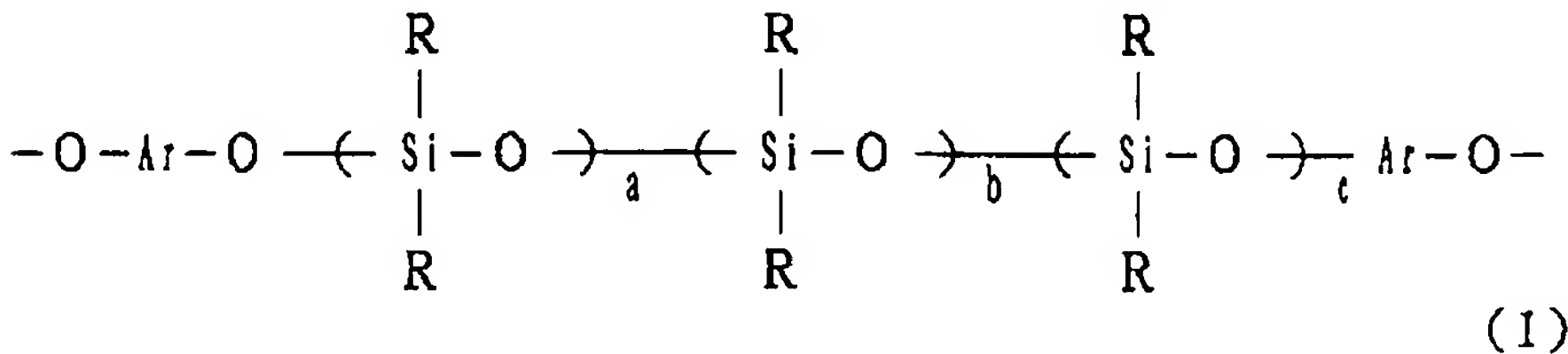
[0003]

Containing aromatic polycarbonate, styrene-containing graft polymer, for example ABS, and polysiloxane-polycarbonate block copolymer, polymer mixture which becomes European Patent (EP) is disclosed in -A-0135794 specification.

Regarding this Prior Art, Formula (I):

[0003]

[Chemical Formula 5]



[0004]

Including polysiloxane block, polysiloxane-polycarbonate block copolymer which becomes is used.

In above Formula (I), Ar is arylene group which is acquired from the biphenol.

According to EP-A-0135794 specification, containing polysiloxane block 2.5-25 weight% of Formula (I), and the block 97.5-75 weight% which has polycarbonate structure block copolymer which becomes is used.

When consisting of blend of polycarbonate to which polymer mixture which you follow EP-A-0135794 specification does not include polysiloxane-polycarbonate block copolymer or polysiloxane block, content of polysiloxane block in this blend must be range of 2.5 or 25 weight%.

[0005]

[Gist of Invention]

As for this invention, as for polymer mixture which has property which is improved when it can acquire a certain specific polysiloxane-polycarbonate block copolymer is used with, it is something which is based on knowledge.

Especially, according to this system, polymer mixture which has satisfactorier impact strength can be acquired.

[0006]

Regarding polymer mixture which you follow this invention, following component:

Formula (a) (II):

[0007]

[0002]

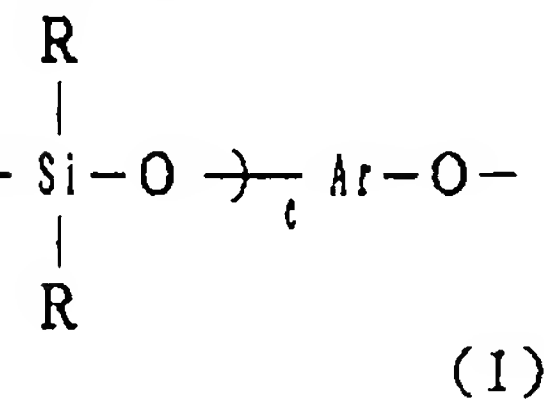
[Prior Art]

Containing aromatic polycarbonate, styrene-containing graft polymer, for example ABS, and polysiloxane-polycarbonate block copolymer, polymer mixture which becomes European Patent (EP) is disclosed in -A-0135794 specification.

Regarding this Prior Art, Formula (I):

[0003]

[Chemical Formula 5]



[0004]

Including polysiloxane block, polysiloxane-polycarbonate block copolymer which becomes is used.

In above Formula (I), Ar is arylene group which is acquired from the biphenol.

According to EP-A-0135794 specification, containing polysiloxane block 2.5-25 weight% of Formula (I), and the block 97.5-75 weight% which has polycarbonate structure block copolymer which becomes is used.

When consisting of blend of polycarbonate to which polymer mixture which you follow EP-A-0135794 specification does not include polysiloxane-polycarbonate block copolymer or polysiloxane block, content of polysiloxane block in this blend must be range of 2.5 or 25 weight%.

[0005]

[Gist of Invention]

As for this invention, as for polymer mixture which has property which is improved when it can acquire a certain specific polysiloxane-polycarbonate block copolymer is used with, it is something which is based on knowledge.

Especially, according to this system, polymer mixture which has satisfactorier impact strength can be acquired.

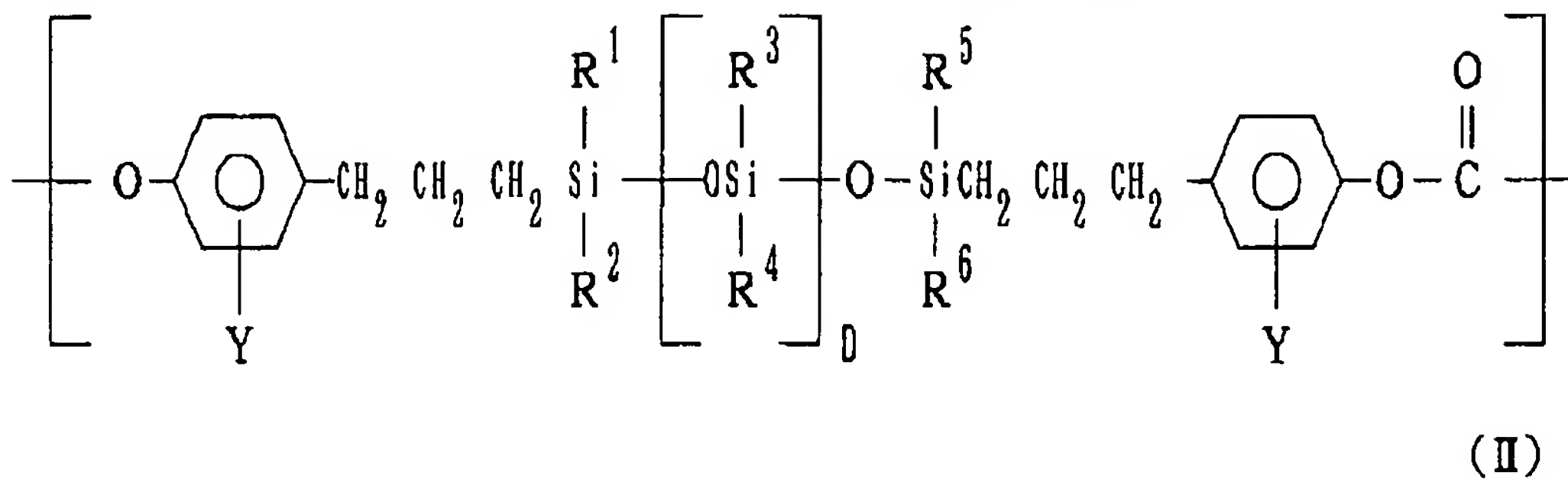
[0006]

Regarding polymer mixture which you follow this invention, following component:

Formula (a) (II):

[0007]

[Chemical Formula 6]

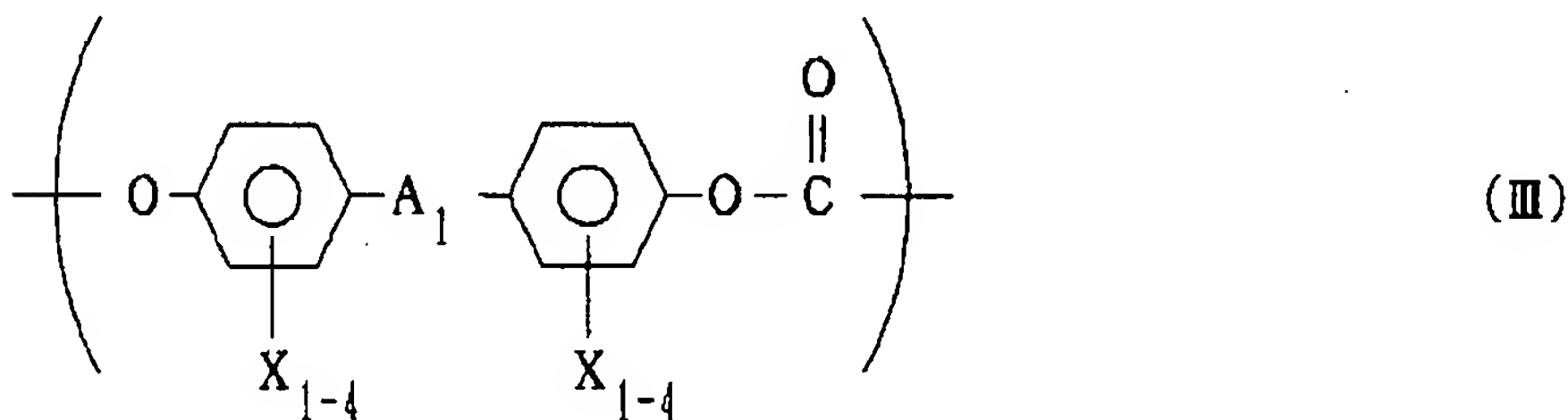


[0008]

polysiloxane block 1-50 weight%; and Formula (b) (III):

[0009]

[Chemical Formula 7]



[0010]

polysiloxane-polycarbonate block copolymer which configuration is done is used from polycarbonate block 50-99 weight%;

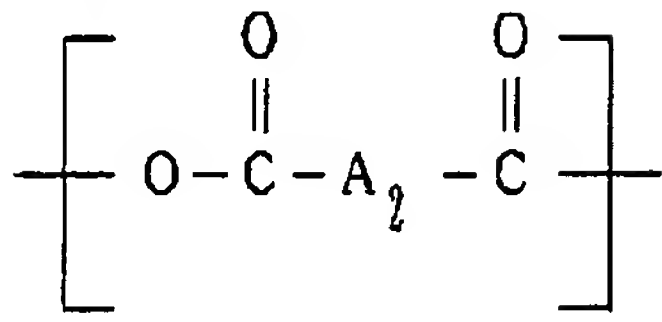
In above Formula (II) and (III), R¹, R², R³, R⁴, R⁵ and R⁶ each oneindependently display hydrogen atom, hydro carbyl group or halogenation hydro carbyl group mutually and; as for the D with integer 5 - 140; as for Y with hydrogen atom or the alkoxy group; as for A₁ divalent hydrocarbon group, -S-, -S-S-, -S which has optionally substitutable 1-15 carbon atoms (O) -, -S the(O)₂-, -O-, or; and as for each X independently it is a hydrogen atom, halogen, or a monovalent hydrocarbon group mutually with -C-.

[0011]

In polymer mixture which you follow {detailed disclosure of invention} this invention, before with polysiloxane-polycarbonate block copolymer of type which was inscribed, as for 75 - 99 weight% of polycarbonate block before as for unit, and 1 - 25 weight% of Formula (III) which was inscribed Formula (IV):

[0012]

[Chemical Formula 8]



(IV)

[0013]

(A_2 6-18 carbon atoms; A_1 X carbon atoms) and A_1 and X have the same meaning as in the foregoing.

As for polymer mixture which you follow this invention, preferably, component (A) and component (B) and per 100 parts by weight of total, of component (C)

- component (A) 50-90 weight%, more preferably 60-80 weight%;

- component (B) 2-40 weight%, more preferably 5-20 weight%; and

- component (C) 2-40 weight%, more preferably 5-20 weight%;

Being something which empty configuration is done, furthermore, component (B) becomes including said graft polymer of 50 - 100 weight% and said copolymer of 0 - 50 weight%.

[0014]

content of polysiloxane unit in component (C) and total of content of rubbery graft base in component (B) calculating component (A) and component (B) and on the basis of total weight of component (C), are inside range of 2.5 or 25 weight%, it is desirable.

blend of styrene and derivative and/or acrylic monomer of (2) methacrylonitrile and/or acrylonitrile and/or maleic anhydride and/or maleic anhydride where (1) styrene and/or; al -methylstyrene and/or aromatic core is substituted graft is done on (3) rubber, as styrene-containing graft polymer which has rubbery graft base, uses in polymer mixture which follows the graft polymer which is acquired by this invention is desirable.

[0015]

polymer mixture which you follow this invention can contain copolymer which the configuration is done from derivative and/or acrylic monomer of styrene and (2) methacrylonitrile and/or acrylonitrile and/or maleic anhydride and/or maleic anhydride where the (1) styrene and/or; al -methylstyrene and/or aromatic core is substituted as styrene-containing

[Chemical Formula 8]

[0013]

Those of type which configuration is done can be used from aliphatic diester unit of (In Formula, as for $\text{A}_{>2}$; and $\text{A}_{>1}$ and X have the same meaning as in the foregoing with alkylene group which has 6 - 18 carbon atom.).

As for polymer mixture which you follow this invention, preferably, component (A) and component (B) and per 100 parts by weight of total, of component (C)

-component (A) 50 - 90 weight%, more preferably 60-80 weight%;

-component (B) 2 - 40 weight%, more preferably 5-20 weight%; and

-component (C) 2 - 40 weight%, more preferably 5-20 weight%;

Being something which empty configuration is done, furthermore, component (B) becomes including said graft polymer of 50 - 100 weight% and said copolymer of 0 - 50 weight%.

[0014]

content of polysiloxane unit in component (C) and total of content of rubbery graft base in component (B) calculating component (A) and component (B) and on the basis of total weight of component (C), are inside range of 2.5 or 25 weight%, it is desirable.

blend of styrene and derivative and/or acrylic monomer of (2) methacrylonitrile and/or acrylonitrile and/or maleic anhydride and/or maleic anhydride where (1) styrene and/or; al -methylstyrene and/or aromatic core is substituted graft is done on (3) rubber, as styrene-containing graft polymer which has rubbery graft base, uses in polymer mixture which follows the graft polymer which is acquired by this invention is desirable.

[0015]

polymer mixture which you follow this invention can contain copolymer which the configuration is done from derivative and/or acrylic monomer of styrene and (2) methacrylonitrile and/or acrylonitrile and/or maleic anhydride and/or maleic anhydride where the (1) styrene and/or; al -methylstyrene and/or aromatic core is substituted as styrene-containing

[0016]

When polymer mixture which you follow this invention you mention earlier contain blend of styrene copolymer and styrene graft polymer can.

In addition as for this invention, it is something which offers goods which was formed from polymer mixture which you follow this invention.

polymer mixture which you follow this invention has little, * component is contained.

namely,

- A. aromatic polycarbonate; and
- B. styrene-containing copolymer and/or styrene-containing graft polymer; and
- C. polysiloxane-polycarbonate block copolymer*

[0017]

polymer mixture which you follow this invention furthermore can contain one kind of following component or above that.

namely,

[0016]		[0017]	
When polymer mixture which you follow this invention you mention earlier contain blend of styrene copolymer and styrene graft polymer can.		In addition as for this invention, it is something which offers goods which was formed from polymer mixture which you follow this invention.	
polymer mixture which you follow this invention has little, * component is contained.		polymer mixture which you follow this invention furthermore can contain one kind of following component or above that.	
namely,		namely,	
A. aromatic polycarbonate; and		A. aromatic polycarbonate; and	
B. styrene-containing copolymer and/or styrene-containing graft polymer; and		B. styrene-containing copolymer and/or styrene-containing graft polymer; and	
C. polysiloxane-polycarbonate block copolymer*		C. polysiloxane-polycarbonate block copolymer*	

Being attached, you explain.

aromatic polycarbonate which does not include A. polysiloxane block

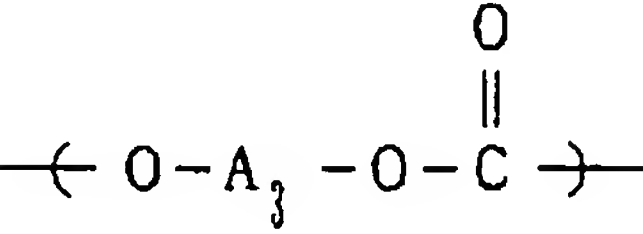
aromatic polycarbonate is that itself known substance.

These of bivalent phenol compound and are produced generally with reaction with the carbonate precursor, for example phosgene, haloformate or carbonate ester.

As for aromatic polycarbonate Formula (V):

[0018]

[Chemical Formula 9]



(V)

[0019]

(A_3 芳香族化合物) 芳香族化合物

芳香族化合物 2 芳香族化合物

4,001,184 芳香族化合物

[0020]

芳香族化合物 芳香族化合物 芳香族化合物

芳香族化合物 芳香族化合物

3,169,121 芳香族化合物

[0021]

芳香族化合物

B. 芳香族化合物/芳香族化合物

芳香族化合物 EP-A-0174493 芳香族化合物 EP-A-0135794 芳香族化合物

[0022]

芳香族化合物(1)芳香族化合物/ α -芳香族化合物/
芳香族化合物(2)芳香族化合物/
芳香族化合物/芳香族化合物/芳香族化合物/
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N-芳香族化合物

芳香族化合物(芳香族化合物)

芳香族化合物 芳香族化合物

[0023]

[0019]

Including unit of (In Formula, A_3 is divalent aromatic group which is induced from bivalent phenol which is used for production of said polymer.), it is a polymer which becomes.

Each one monocycle or polycyclic aromatic compound which includes hydroxyl group of 2 the direct bond it is done at time of producing aromatic polycarbonate in carbon atom of aromatic core it can use as bivalent phenol.

When it is stated in for example U. S. Patent No.4,001,184 specification, also that itself known branched polycarbonate issuitable.

[0020]

ester precursor, for example terephthalic acid or polymerization reaction is done under existing of bifunctional carboxylic acid, like the ester-forming derivative, also so-called polyester carbonate which is acquired by is suitable aromatic polycarbonate.

These polyester carbonate have ester compound and carbonate compound in polymer chain.

polyester carbonate is stated in for example U. S. Patent No.3,169,121 specification.

[0021]

It can also use blend of various polycarbonate.

styrene-containing graft polymer which has base for B. styrene-containing copolymer and/or rubbery graft

suitable styrene-containing copolymer and suitable styrene-containing graft polymer are stated in for example EP-A-0174493 number and EP-A-0135794 specification.

[0022]

styrene-containing copolymer (1) styrene and/or; α -methylstyrene and/or aromatic core is copolymer which configuration is done from unit which is induced from derivative and/or acrylic monomer of styrene compound and (2) acrylonitrile and/or methacrylonitrile and/or maleic anhydride and/or maleic anhydride which are substituted in.

suitable derivative of maleic anhydride is maleimide and N-phenyl maleimide.

Example of suitable acrylic monomer is methyl methacrylate, (meth) acrylic acid.

Being that itself known, these following to method which is usually used for production of copolymer it can acquire these copolymer.

[0023]

blend of monomer of at least two kinds grafting it does
styrene-containing graft polymer on the base for rubbery
graft, it is acquired by .

Example of base for suitable graft is polybutadiene,
butadiene-styrene copolymer.

It is thought that also other rubber, for example acrylate
rubber and EPDM rubber are suitable.

Next, monomer blend grafting is done on said rubber.

suitable monomer is shown in aforementioned Claim 5.

C. polysiloxane-polycarbonate block copolymer

When polymer mixture which you follow this invention it is
shown in theaforementioned Claim 1 or 2
polysiloxane-polycarbonate block copolymer contains.

When in aforementioned Claim 1 specific it is done, in
EP-A-92305883specification (priority right which is based on
1991 July1 day attaching U.S. Patent ApplicationSN.724,022
numbers)of 1992 June25 day applications block copolymer
and those production method aredisclosed.

[0024]

When in aforementioned Claim 2 specific it is done, in
EP-A-92305886specification (priority right which is based on
1991 July1 day attaching U.S. Patent ApplicationSN.724,018
numbers)of 1992 June25 day applications block copolymer
and those production method aredisclosed.

When it is used for this invention, polymer mixture of
polycarbonate and block copolymer isdisclosed in
EP-A-92305885specification (priority right which is based on
1991 July1 day attaching U.S. Patent ApplicationSN.724,023
numbers) of 1992 June25 day applications.

[0025]

It can use in polymer mixture which follows everything of
polysiloxane-polycarbonate block copolymer which isstated
in patent application specification of aforementioned 3 cases
this invention.

D. flame retarding agent

polymer mixture which you follow this invention one kind or
can contain the flame retarding agent above that.

flame resistance of polycarbonate polymer and/or
styrene-containing copolymer or styrene-containing graft
polymer is improved can use everything ofusual flame
retarding agent which is suited.

flame retarding agent which is shown next is something for
illustrating:

salt;- halogen-containing low molecular weight and/or high

blend of monomer of at least two kinds grafting it does
styrene-containing graft polymer on the base for rubbery
graft, it is acquired by .

Example of base for suitable graft is polybutadiene,
butadiene-styrene copolymer.

It is thought that also other rubber, for example acrylate
rubber and EPDM rubber are suitable.

Next, monomer blend grafting is done on said rubber.

suitable monomer is shown in aforementioned Claim 5.

C. polysiloxane-polycarbonate block copolymer

When polymer mixture which you follow this invention it is
shown in theaforementioned Claim 1 or 2
polysiloxane-polycarbonate block copolymer contains.

When in aforementioned Claim 1 specific it is done, in
EP-A-92305883specification (priority right which is based on
1991 July1 day attaching U.S. Patent ApplicationSN.724,022
numbers)of 1992 June25 day applications block copolymer
and those production method aredisclosed.

[0024]

When in aforementioned Claim 2 specific it is done, in
EP-A-92305886specification (priority right which is based on
1991 July1 day attaching U.S. Patent ApplicationSN.724,018
numbers)of 1992 June25 day applications block copolymer
and those production method aredisclosed.

When it is used for this invention, polymer mixture of
polycarbonate and block copolymer isdisclosed in
EP-A-92305885specification (priority right which is based on
1991 July1 day attaching U.S. Patent ApplicationSN.724,023
numbers) of 1992 June25 day applications.

[0025]

It can use in polymer mixture which follows everything of
polysiloxane-polycarbonate block copolymer which isstated
in patent application specification of aforementioned 3 cases
this invention.

D. flame retarding agent

polymer mixture which you follow this invention one kind or
can contain the flame retarding agent above that.

flame resistance of polycarbonate polymer and/or
styrene-containing copolymer or styrene-containing graft
polymer is improved can use everything ofusual flame
retarding agent which is suited.

flame retarding agent which is shown next is something for
illustrating:

salt;- halogen-containing low molecular weight and/or high

分子重量化合物;and/or which has flame resistance vis-a-vis -aromatic polycarbonate

分子重量化合物;and/or which has flame resistance vis-a-vis -aromatic polycarbonate

<input type="checkbox"/>					
<input type="checkbox"/>	perfluoro alkane polymer and/or				
<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	synergistic agent active metal		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Time poly (aryl-arylene phosphate) or poly (alkalyl-arylene phosphate).

Time poly (aryl-arylene phosphate) or poly (alkalyl-arylene phosphate).

[0026]

[0026]

salt which has flame resistance being generally known, including the polycarbonate, is used for large scale vis-a-vis polymer mixture which becomes.

salt which has flame resistance being generally known, including the polycarbonate, is used for large scale vis-a-vis polymer mixture which becomes.

It can use for polymer mixture which follows everything of these salt which are suited for one for polymer mixture which contains polycarbonate this invention.

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Especially, salt and sodium aluminum hexa fluoride of potassium salt, perfluorination alkane sulfonic acid of salt, for example diphenylsulfone sulfonate of the organic and inorganic sulfonate, for example trichloro sodium benzenesulfonate, sulfone sulfonate can be listed.

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[0027]

[0027]

Example of suitable halogen containing compound deca bromo diphenylether, octa bromo biphenyl, octa bromo diphenylether and furthermore thing or core bromine which is induced from oligomer or polymeric bromine compound, for example tetrabromobisphenol A includes also those which are induced from polyphenylene ether which is substituted.

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tetra fluoro ethylene polymer is used as preferably perfluoro alkane polymer.

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polymer mixture which you follow this invention can contain active metal or the metal compound, for example antimony oxide etc furthermore as synergistic agent.

polymer mixture which you follow this invention can contain active metal or the metal compound, for example antimony oxide etc furthermore as synergistic agent.

These synergistic agent usually are used combining with halogen containing compound.

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E. usual additive

E. usual additive

polymer mixture which you follow this invention in addition to component which you mention earlier, can contain one kind or additive, for example filler, reinforcing fiber, stabilizer, pigment and dye, plasticizer, mold release and antistatic activity agent where or more of that is usually used.

polymer mixture which you follow this invention in addition to component which you mention earlier, can contain one kind or additive, for example filler, reinforcing fiber, stabilizer, pigment and dye, plasticizer, mold release and antistatic activity agent where or more of that is usually used.

[0028]

[0028]

polymer mixture following to usual method for producing polymer mixture, the kneading does for example necessary component in extruder, it can acquire with.

polymer mixture which you follow this invention component (A) + (B) per 100 parts by weight, following component of + (C) can contain (D) and (E).

D. one kind or flame resistance modifier 0-20 parts by weight; and/or above that

E. usual additive 0-100 parts by weight*

[0029]

{Statement of Working Example } Working Example (Working Example I or VIII) and listing Comparative Example (Comparative Example A or F) next, furthermore you explain this invention concretely.

Following component was used regarding Comparative Example A and Working Example I, II and III of the next description.

aromatic polycarbonate homopolymer; which has weight average molecular weight 25,500 which was induced from PC-1: bisphenol A, and phosgene does not include polysiloxane block

aromatic polycarbonate homopolymer; which has weight average molecular weight 28,000 which was induced from PC-2: bisphenol A, and phosgene does not include polysiloxane block

ABS: styrene and acrylonitrile on butadiene rubber graft bond graft copolymer; which the configuration is done substantially from butadiene rubber which has rubber content of approximately 50 weight% which are done

weight ratio 72:28 of SAN-1: styrene: acrylonitrile styrene-acrylonitrile copolymer; which has weight average molecular weight of having and 100,000

weight ratio 72:28 of SAN-2: styrene: acrylonitrile styrene-acrylonitrile copolymer; which has weight average molecular weight of having and 130,000

polysiloxane block 43 wt% of LR: Formula (I) (Aforementioned reference) and polysiloxane-polycarbonate block copolymer* which has polycarbonate block 57 weight% of the Formula (III) (Aforementioned reference)

Everything of R group in Formula (I) displays methyl group, as for the Ar with arylene group which was induced from bisphenol A, and, total of a+b+c is being even, 10.

[0030]

weight average molecular weight of LR is approximately 60,000.

XT-1: (II) () 43 %
(III) () 57 %
- ()

R^1 R^2 () D 10
Y () A_1 2,2- () X
()

[0031]

XT-1 50,000

XT-2: (II) () 20 %
(III) () 80 %
- ()

R^1 R^2 () D 50
Y () A_1 2,2- () X
()

[0032]

XT-2 30,000

() A B
()

A F ()
I VIII ()

()
()

()

()
(ASTM D256
(), (Charpy) (DIN 53453
())

[0033]

ISO 1133 ()

() A B ()

A

polysiloxane block 43 wt% of XT-1: Formula (II)
(Aforementioned reference) and polysiloxane-polycarbonate
block copolymer* which has polycarbonate block 57 weight%
of the Formula (III) (Aforementioned reference)

In Formula, as for $R^{¹}$ and $R^{²}$ with
all methyl group, as for D being even, with 10, as for Y with
hydrogen atom, 2 and 2-propyl group you display $A^{₁}$
, and X is hydrogen atom.

[0031]

weight average molecular weight of XT-1 is approximately
50,000.

polysiloxane block 20 weight% of XT-2: Formula (II)
(Aforementioned reference) and polysiloxane-polycarbonate
block copolymer* which has polycarbonate block 80 weight%
of the Formula (III) (Aforementioned reference)

In Formula, $R^{¹}$ and $R^{²}$ everything
with methyl group, the D being even, with 50, as for Y with
hydrogen atom, as for the $A^{₁}$ with 2 and 2
-propyl group, and as for X are hydrogen atom.

[0032]

weight average molecular weight of XT-2 is approximately
30,000.

From component which mentions earlier various polymer
mixture, however using at the Table A of postscript and ratio
which is shown in chart B, it produced.

As for Comparative Example A or F being something
regarding Comparative Example which shows Prior Art, as
for Working Example I or VIII it is something regarding
polymer mixture which you follow this invention.

component which is appointed kneading it does these various
polymer mixture in the extruder, it produced with .

extrusion body which is acquired was formed next in pellet.

It produced standardization test rod from pellet with injection
molding, measured those notched Izod impact strength with
various temperature and (In ASTM test method D256
following), furthermore it measured also notched impact
strength with char P (charpy) test (In DIN test method 53453
following).

[0033]

It measured also melt viscosity exponent which you follow
ISO test method 1133.

These test result are recorded to Table A and chart B
of postscript.

Table A

□□□(□□□) A B C I II III

□□(□□□)

□□□ No. 73 74 76 81 83 85

PC-1 60 55 58 48 55 58

SAN-1 22 22 22 22 22 22

ABS 18 18 10 10 18 10

LR - 5 10 - - -

XT-1 - - - - 5 10

XT-2 - - - 20 - -

□□□□(□□%) 9.0 11.3 9.3 9.0 11.3 9.3

□□

Working Example (Comparative Example) A BC I II III

composition (parts by weight)

compositionNo. 73 74 76 81 83 85

PC-1 60 55 58 48 55 58

SAN-1 22 22 22 22 22 22

ABS 18 18 10 10 18 10

LR - 5 10 - - -

XT-1 - - - - 5 10

XT-2 - - - 20 - -

rubber content (weight%) 9.011.39.39.011.39. 3

property

□□□,260□/5kg		12	16	80	19	12	14
□□□,260□/5kg		12	16	80	19	12	14
□□□□□□□□	□						
notched Polygonum tinctorium (indigoplant leaf)□□	jp7						
□□□□□ +23□ -20□ -49□		570390200	540270120	205030	530520430	620500290	620490280
impact strength □ +23□ -20□ -49□		570390200	540270120	205030	530520430	620500290	620490280
□□□□□□□□							
char P notched							
□□□□□ +23□		29	32	16	54	43	41
impact strength □ +23□		29	32	16	54	43	41

*□□□□:ABS □□□□□□□□□□□□ LR□XT-1 □□
 XT-2 □□□□□□□□□□□□□□□□□□□□□□□□
 □%□□□□□□□□

□0034□

polybutadiene content and it calculated LR, XT-1 or XT-2 in
 *rubber content:ABS from polysiloxane content, in it
 displayed as weight% for polymer mixture.

[0034]

			□□					
			□□					
□□□□□□□□	□	□	□	IV	□	VI	VI	VIII
Working Example	□	□	□	IV	□	VI	VI	VIII

[illegible]

*□□□□:□ A □□□□□□□□

Note reference under *rubber content:Table A.

□0035□

[0035]

[illegible]

From Table A, addition (Comparative Example B and C) of usual polysiloxane-polycarbonate block copolymer brings marked decrease of impact strength, it is recognized .

[illegible]

As for this concerning notched impact value which you follow notched impact value and the Char P method in all measurement temperature which you follow Izod method it is applicable.

1111111111111111

Also melt viscosity exponent increases.

□□□□□□□□(□□II □□ III)□□□□□□□□□□□□□□
 □□□□□□□□□□□□□□□□□□□□□□□□-□□□□□□□□
 □□□□□□□□□□□□□□□□ A □□□□□□□□□□□□□□
 □□□□□□□□□□□□□□□□-□□□□□□□□□□□□□□□□
 □□□□□□□ B □□ C □□□□□□□□□□□□□□□□□□□□
 □□□□

Regarding Working Example (I, II and III) which you follow this invention being satisfactory in comparison with measured value in Comparative Example A where satisfactory notched impact value is acquired for most part by always, these does not include the polysiloxane-polycarbonate block copolymer, always many times it shows satisfactory value at least furthermore in comparison with when it is a Comparative Example B and a C which use usual polysiloxane-polycarbonate block copolymer.

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

melt viscosity exponent does not show marked increase that much.

□0036□

[0036]

B _____(_____
_____)_____-(_____(_____)_____

With Working Example and Comparative Example which you follow chart B, another polycarbonate (Those which have a

□□□□□□)□□□□□□

higher molecular weight.) and another styrene-acrylonitrile copolymer (Those which have a higher molecular weight.) was used.

□□□□□□□ A □□□□□□□□□□□□

These results show status which is similar to result of the Table A.

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
□□□□□□□□□□□□□□□□

As for patent and patent application specification which quotation are done you regard the thing which is incorporated in this specification as reference material of the this invention on description above.